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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,156	10/09/2001	Dan Tormey	10015052-1	5614

7590 04/21/2004

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
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EXAMINER

LANE, JOHN A

ART UNIT	PAPER NUMBER
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2188

DATE MAILED: 04/21/2004

2

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application

09/973,156

Examiner

Jack A Lane

Applicant(s)

TORMEY ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 1-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED OFFICE ACTION

1. This Office action is responsive to the application filed 10/09/01. Claims 1-29 are presented for examination. During a telephone conversation with Mr. Shreen Danamraj on April 15, 2004 a provisional election was made with traverse to prosecute the invention of Group II, claims 17-29. Affirmation of this election must be made by applicant in replying to this Office action. Claim 1-16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

2. The examiner requests, in response to this Office action, any reference(s) known to qualify as prior art under 35 U.S.C. sections 102 or 103 with respect to the instant claims. That is, any prior art similar to the instant claimed invention that could reasonably be used in a 102/103 rejection. This request does not require applicant to perform a search. This request is not intended to interfere with or go beyond that required under 37 C.F.R. 1.56 or 1.105. This request may be fulfilled simply by asking the attorney(s) of record handling prosecution and the inventor(s)/assignee for references qualifying as prior art. A simple statement that the query has been made and no prior art found is sufficient to fulfill the request. Otherwise, the fee and certification requirements of 37 CFR section 1.97 are waived for those documents submitted in reply to this request.

This waiver extends only to those documents within the scope of this request under 37 CFR, section 1.105 that are included in the application's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this request and any information disclosures beyond the scope of this request under 37 CFR section 1.105 are subject to the fee and certification requirements of 37 CFR section 1.97. In the event prior art documentation is submitted a discussion of relevant passages, figs. etc. is requested. A response to this inquiry is greatly appreciated.

The examiner also requests, in response to this Office action, support be shown for language added to the claims on amendment. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s). in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

2. During a telephone conversation with Mr. John Kidney on February 25, 2002 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-2 and 7-14. Affirmation of this election must be made by applicant in replying to this Office action. Claim 3-6 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Election/Restrictions

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-16, drawn to a unidirectional stack, classified in class 712, subclass 202.
- II. Claims 17-29, drawn to a unidirectional stack having a high water mark, classified in class 712, subclass 202.

4. The inventions are distinct, each from the other because:

Inventions Group I and Group II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention of Group II has separate utility such as in a dual stack device. See MPEP § 806.05(d).

5. The non-statutory double patenting rejection, whether of the obviousness-type or non-obviousness-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent. *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(b) and (c) may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78(d).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 17-29 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of U.S. patent application No. 09/973,665. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 17-29 and the 1-43 each recite "initializing a fixed stack marker...stack", "initializing a high water mark...execution", "upon fetching a program...stack", "determining whether...within predetermined stack range", and "providing a warning...range." However, claims 17-29 recite a single stack architecture, whereas, claims 1-43 recite a double stack architecture. Steele, Jr. (5,903,899) is introduced for teaching a single stack (fig. 1B, 1C) and double stack (2,3) architecture. The single stack has advantages over the double stack in that implementation is less complex, that is, the double stack requires more pointers. The double stack implementation performs better while using garbage collection algorithms. The presently claimed stack architectures are obvious variations of one another given the benefits attributable to each design. Because a single stack is less complex than a double stack and double stack is performs better while using garbage collection algorithms it would have been obvious to modify the present application to a double stack or modify

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the copending application to a single stack given the teaching of Steele's stack architectures.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. The following is an examiner's statement of reasons for allowance:


The closest art of record, namely Steele, Jr. (5,903,899), does not teach nor render obvious the claimed stack system as defined in the independent claims having first and second stacks and means for tracking the stacks growth to determine the farthest location the stacks have grown relative to a base during program execution (i.e. claimed "high water mark"). The claimed "high water mark" differs from Steele's stack pointer in that the stack pointer (SP) moves as shown in figure 2c of the present invention. Over time given program execution the stack pointer may recede from the farthest location relative to the base. The claimed "high water mark" maintains this farthest location.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack A Lane whose telephone number is 703 305-3818. The examiner can normally be reached on Mon-Fri from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 703 306-2903. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JACK A. LANE
PRIMARY EXAMINER